

## Cisco 7200 Series: The Power of the Enterprise In A Cost-Effective Package

Routers are the primary building blocks in today's network. They provide the scalability to mission-critical applications, and they are key to gaining the benefits of network-layer services, including security, quality of service and traffic management. The Cisco 7200 delivers the power of the enterprise breaking new ground in price/performance.

As the newest member of the Cisco 7000 Family, the Cisco 7200 provides high-performance, density, and availability with low per port prices. It also introduces industry-leading serviceability and manageability features. With its addition into Cisco's product line, customers have scalable solutions based on differing requirements for density, performance, and availability.

The Cisco 7200 delivers exceptional price/performance to meet distributed backbone and regional office requirements. Customers can now gain the advantages of high-performance network-layer switching and services, including security, quality of service, and traffic management to more locations throughout the Enterprise.

The Cisco 7200 series routers delivers the full suite of Cisco Internetwork Operating System (Cisco IOS™) software services; they are capable of managing access to network resources, allocating quality of service among applications, and providing value-added functions such as NetFlow™ switching and encryption. The Cisco 7200 series offers the widest set of protocols available, including IP, IPX, AppleTalk, DECnet, and VINES. In addition, the series supports both Cisco's Inter-Switch Link (ISL) protocol for transporting virtual LANs (VLANs) across Fast Ethernet and the IEEE 802.10 standard for transporting VLANs over Fiber Distributed Data Interface (FDDI) ports. VLANs enable the logical definition of bridge groups that can be overlaid on the physical network.

The Cisco 7200 series sets new standards in price/performance, meeting requirements for high-throughput at an affordable price. With a 150-MHz RISC processor and SRAM, the Cisco 7200 provides over 600 Mbps of bandwidth capacity and switching performance at 150,000

packets per second (pps). Also available is an even more cost effective RISC processor yielding 200 Mbps of bandwidth and 100,000 pps which makes the Cisco 7200 further optimized for price/performance.

NetFlow switching, Cisco IOS switching mechanism, allows the Cisco 7200 to combine high-performance network-layer switching with the connection-oriented-application of network services, such as security, quality of service, and traffic management. It also enables detailed traffic statistics by protocol and IP address.

The Cisco 7200 series, consisting of the four-slot 7204 and the six-slot 7206, offers scalable density for Ethernet, Token Ring, serial, ISDN, HSSI, Fast Ethernet, 100VG AnyLAN, FDDI and ATM. The Cisco 7200 uses the same port adapters as the Cisco 7500-Versatile Interface Processor (VIP), thus protecting customer investment in interfaces and simplifying sparing. With these higher-density port adapters, the Cisco 7206 supports up to 48-Ethernet or serial ports, 24 Token Ring ports, 24-serial ports, 12 HSSI ports, 7 Fast Ethernet ports, or 6 FDDI, or 3 ATM ports. With the availability of both four-slot and six-slot chassis, density is scalable to meet most customers' needs.

### **New Levels of Reliability, Availability, Serviceability, and Manageability**

The Cisco 7200 series offers exceptional reliability, availability, and serviceability designed to handle mission-critical applications. To insure high system availability, Cisco 7200 systems support dual current-sharing power supplies (AC or DC) and online insertion and removal of port adapters so that interfaces can be added, removed, or replaced without service interruption. A PCMCIA Flash

memory card enhances reliability by storing backup software images and configuration files. For maximum uptime, the Cisco 7200 supports Cisco IOS Hot Standby Router Protocol (HSRP), which provides fast cutover to a backup router in the event of a system or link failure. Environmental monitors have levels of escalation so that the operator may take corrective action prior to any system shutdown. To enhance serviceability, each component of the Cisco 7200 system, including the backplane, is field-replaceable.

Also new, the Cisco 7200 introduces a hypertext markup language (HTML)-based management tool to simplify router configuration and management. Customers can use a Web browser to navigate through Command Line Interface (CLI) with hot links. With a logical view of the hardware configuration, customers can simply point and click on interfaces to check status or modify configurations. Also provided through hot links, customers can perform basic trouble shooting operations such as verifying software versions.

## The Cisco 7200 Provides the Performance and Density Required for Real-World Applications

Today's internetworks have evolved where customers deploy both routing and switching elements in the LAN. LAN switches eliminate network congestion and provide high performance through dedicated bandwidth to the desktop. Routing elements bring the benefits of network-layer services, specifically stability, security, and control, to LAN network designs. With the introduction of the Cisco 7200 and its optimized price/performance, customers can enjoy the benefits of network-layer functionality in more points of their network.

With its optional embedded Fast Ethernet port and support for ISL, customers can connect the Cisco 7200 to Catalyst™ switches for inter-VLAN communication while preserving port adapter slots.

In the WAN environment, the Cisco 7200 offers Internet service providers (ISPs) high serial density and high availability features, with a low price per port. ISPs can more profitably support large numbers of subscribers requiring fast WAN connections at remote Points of Presence (POPs). Its compact size of just three rack units conserves rack space. With support for dual power, online insertion and removal, and field-replaceable components, ISPs can minimize network downtime.

For IBM campuses, the Cisco 7200 offers high Token Ring density with up to 24 ports. Providing high feature performance and full Cisco IOS support for routing and bridging, the Cisco 7200 offers a cost-effective, collapsed backbone solution for campus Token Ring networks. The Cisco 7200 supports a high-speed backbone and high-density 16-Mbps Token Rings that can be used to subnet the network to control campus broadcasts.

## Summary

The Cisco 7200 introduces high-end performance, density, and availability into a new cost-effective package. The Cisco 7200 breaks new ground in price/performance and allows network-layer capabilities to be extended to a much wider range of network configurations and environments. Whether the environment is a single campus or network of regional offices, the Cisco 7200 provides you scalable options for performance and density at an affordable price.

## Features and Benefits

The Cisco 7200 series offers a rich set of capabilities addressing requirements for performance, density, high reliability, availability, serviceability, and manageability.

### Cisco 7200 Feature and Benefits

Feature	Benefit
High Performance	<ul style="list-style-type: none"><li>• Supports high-density configurations</li><li>• Supports today's high-speed media</li></ul>
High Density	<ul style="list-style-type: none"><li>• Offers scalable solution with many media options</li></ul>
Common Port Adapters with Cisco 7000 and 7500 VIPs	<ul style="list-style-type: none"><li>• Simplifies sparing</li><li>• Protects customer investment in interfaces</li></ul>
Fast Ethernet Port on I/O Controller	<ul style="list-style-type: none"><li>• Conserves port adapter slots</li><li>• Reduces Fast Ethernet price per port</li></ul>
Online Insertion and Removal of Port Adapters	<ul style="list-style-type: none"><li>• Allows seamless upgrades to higher density and new port adapters without rebooting or taking the system off line</li><li>• Reduces operation intervention since like port adapters are automatically reconfigured</li></ul>

Feature	Benefit
Dual Power Supplies with Current Sharing	<ul style="list-style-type: none"> <li>• High reliability with redundant system (AC or DC)</li> <li>• Extends individual power supply life through load sharing</li> <li>• Allows user to implement dual sources of prime power. Each power supply has its own power cord, eliminating risks associated with the failure of uninterruptible power supply systems (UPS) or building power.</li> <li>• Power supplies share current so that automatic cutover occurs in case of failure</li> </ul>
Fast Boot	<ul style="list-style-type: none"> <li>• Enables servicing to be performed within seconds, minimizing downtime and impact on network availability</li> </ul>
Environmental Monitoring	<ul style="list-style-type: none"> <li>• Alerts operator of fluctuations before critical conditions occur, allowing proactive resolution while the system stays on line</li> </ul>
Status and Health LEDs	<ul style="list-style-type: none"> <li>• Provides at-a-glance determination of status</li> </ul>
Easy Access to all Components	<ul style="list-style-type: none"> <li>• Enables servicing to be performed within seconds, minimizing downtime and impact to the network</li> </ul>
Field-Replaceable Components	<ul style="list-style-type: none"> <li>• Allows components to be serviced locally without return to factory</li> </ul>
System Flash Memory	<ul style="list-style-type: none"> <li>• Enables fast, reliable software and microcode upgrades</li> <li>• Allows single, centralized point of administration, obviating the need to visit each router site when upgrading software or microcode</li> </ul>
Cisco Web Browser Interface	<ul style="list-style-type: none"> <li>• Provides navigational tool through the CLI and allows user to check status or modify configuration through point-and-click operation.</li> </ul>
Flexible Rack-Mounting	<ul style="list-style-type: none"> <li>• Allows users to optimize installations through front or rear mounting</li> </ul>
Cable Management	Provides convenient strain relief and anchor points, simplifying installation and preventing accidental dislodging or damaging of cables

## Technical Specifications

The Cisco 7200 product series provides high density and broad media support. The series' modularity allows users to select the exact configuration required to optimize installations and network designs for cost and functionality.

## The Cisco 7200 Series<sup>1</sup>

Feature	Cisco 7204	Cisco 7206
System Processor	NPE-150	NPE-150
Processor Type	MIPS R4700 150 MHz CPU with 1MB static RAM	MIPS R4700 150 MHz CPU with 1MB static RAM
Bandwidth	600 Mbps	600 Mbps
System Processor	NPE-100	NPE-100
Processor Type	MIPS R4700 150 MHz CPU (no static RAM)	MIPS R4700 150 MHz CPU (no static RAM)
Bandwidth	200 Mbps	200 Mbps
Chassis Slots	4	6
Configurable Slots	4	6
Ethernet (10BaseT)	32	48
Ethernet (10BaseFL)	20	30
Fast Ethernet (TX)	5	7
Fast Ethernet (FX)	4	6
100 VG AnyLAN	4	6
FDDI (FDX, HDX)	4	6
ATM	3	3
Token Ring (FDX, HDX)	16	24
Serial	32	48
ISDN PRI/ Channelized Serial	240 Channels	360 Channels
ISDN BRI	32	48
HSSI	8	12

## Cisco 7000 Family Software Subsets and Options

The Cisco 7200 offers six software subsets. These include Enterprise plus APPN, Enterprise, Desktop + IBM + APPN, Desktop + IBM, IP routing, and network/Layer 3 Switching. One is minimally required to operate the system. In addition, software feature licenses are required as applicable to license specific features within software subsets.

1. Operational considerations may reduce the number of port adapters or a given number of parts that can be supported below the maximum.

## Software Feature Licenses

Category	Software Feature Licenses
WAN Packet Protocols	X.25, X.25 Switching, Frame Relay, SMDS, Frame Relay Switching, ATM DXI, SMDS over ATM
Interdomain Routing	BGP, EGP for Internet scale routing
NetFlow	NetFlow Switching and NetFlow Data Export
Network Address Translation	Network Address Translation

## Dimensions and Weight

### Cisco 7200 Dimensions and Weight Specifications

Feature	Cisco 7204	Cisco 7206
Height	5.25 in (13.34 cm)	5.25 in (13.34 cm)
Width	16.8 in (42.67 cm)	16.8 in (42.67 cm)
Depth	17 in (43.18 cm)	17 in (43.18 cm)
Weight (max)	50 lb (22.7 kg)	50 lb (22.7 kg)
Weight (Installation/ Minimum)	36.60 lb (16.64 kg)	36.60 lb (16.64 kg)

## Power Requirements

### Cisco 7200 Series Power Requirements

Feature	Cisco 7204	Cisco 7206
Input, VA	370W max	370W max
Output, Watts	280W max	280W max
Heat Dissipation	560W (1262 Btu/hr)	560W (1262 Btu/hr)
AC Input Voltage	100-240 VAC	100-240 VAC
Frequency	50-60 Hz	50-60 Hz
AC Input Current	5A max @ 110 VAC 5A max @ 110 VAC	2.5A max @ 240 VAC 2.5A max @ 240 VAC
DC Input Voltage	-38 VDC min -48 VDC nominal -72 VDC max	-38 VDC min -48 VDC nominal -72 VDC max
DC Input Current	5.8A max @ -48VDC	5.8A max @ -48VDC

## Environmental

### Cisco 7200 Family Environmental Specifications

Function	Cisco 7204	Cisco 7206
Operating Temperature	32 to 104 F (0 to 40 C)	32 to 104 F (0 to 40 C)
Nonoperating Temperature	-4 to 149 F (-20 to 65 C)	-4 to 149 F (-20 to 65 C)
Relative Humidity	10 to 90% noncondensing	10 to 90% noncondensing

## Regulatory Compliance

The Cisco 7200 series conforms to the following set of safety and regulatory standards:

- Safety
  - UL 1950
  - CSA 22.2-No. 950
  - EN60950
  - EN41003
  - AUSTEL TS001
  - AS/NZS 3260
- EMI
  - AS/NRZ 3548 Class A
  - CSA Class A
  - FCC Class A
  - EN60555-2
  - EN55022 Class B
  - VCCI (Class II)
- Immunity
  - IEC-1000-4-2 (ESD)
  - IEC-1000-4-3 (radiated susceptibility)
  - IEC-1000-4-4 (electrical fast transients)
  - IEC-1000-4-5 (surge)
  - IEC-1000-4-6 (injected RF swept)
  - IEC-1000-4-11 (power line voltage)
  - IEC 1000-3-2 (harmonics)



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